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KEYNOTE

New Ideas from Leading Lights

The Engine That Drives Success

The best companies have the best business models because they have the best IT strategies.

BY DON TAPSCOTT

CIO Editor in Chief Abbie Lundberg interviews author Nicholas Carr—and puts his theory to the test—in ["The Argument Over IT."](#)

NICHOLAS CARR is once again grabbing center stage now that his new book, *Does IT Matter?* is hitting the bookstores. The book is essentially an expanded version of his provocative *Harvard Business Review* article in which he argues that IT has become a commodity—necessary for competitiveness but insufficient for advantage.

Carr argues that, in the past, companies such as American Airlines, FedEx and American Hospital Supply built their own proprietary systems to differentiate their offerings or lock in customers. Now that IT has become a commodity—a pervasive infrastructure—any company has access and any system can be instantly replicated. And therefore, he argues, any competitive advantage goes out the window.

Trouble is, his newly improved argument, like his original paper, is fundamentally wrong. Companies that heed his advice—don't spend; follow, don't lead—are doomed to mediocrity or worse.

To begin, his core thesis is not supported by facts. There were no halcyon days of proprietary IT competitiveness as he describes. I've been advising companies since 1975, and looking back, I can testify that there were only a handful of stories that demonstrated how companies used IT to radically change their business models. Rather, in the era of data processing, companies used IT for mundane purposes—to automate old business processes like accounting and HR. Systems targeted at competitiveness were rare, very expensive and took years to build. Proprietary systems benefited vendors more than users, as companies were locked into their computer vendors. Software was not portable, and vendors made gross margins of more than 80 percent on hardware.



Successes like American, FedEx and American Hospital Supply are legendary precisely because they were so rare. For every success story where companies used IT to compete, there were countless failures. At nearly all companies, IT mattered lots, but not to achieve competitive advantage. Carr's rewrite of history makes for a good read—but only if you enjoy fiction.

Today the positive examples are actually much more plentiful. Even when it comes to dotcoms and Internet pureplays, many early innovators are competing well today, which undermines Carr's assertion that "the technology cycle works against pioneers." For sure, the early Internet companies with bad business models failed. Yet, household names like Amazon.com, Ameritrade, CheckFree, DoubleClick, eBay, E-Trade, Google, Salesforce.com, University of Phoenix Online, Yahoo and even Priceline—to name a few—have highly distinguished business models and are growing rapidly in revenue and earnings.

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More important, Amazon.com, Best Buy, Tesco and Wal-Mart dominate their respective retail markets—enabled by superior IT, customer relationships, business designs, differentiated offerings and other benefits.

The same is true for many other industry competition leaders: banking (Citigroup), consumer credit (American Express), consumer food products (PepsiCo), household (Procter & Gamble and Colgate-Palmolive), furniture (Herman Miller), communications technology (Cisco), property insurance (Progressive Casualty Insurance), metals (Alcoa) and hotels (Marriott). Of *Fortune's* recent top 10 most admired companies, eight are well-known for their superior use of IT in supporting a unique business strategy—Dell, FedEx, GE, IBM, Microsoft, Southwest Airlines, Starbucks and Wal-Mart.

Why You Can't Take the "I" Out of IT

With the actual evidence refuting his view, it's tempting to say that Carr's elegant thesis works well in theory but not in practice. Digging deeper, we see why it doesn't work in theory either.

The problem starts with Carr's definition of information technology. In making the case that IT has become a commodity, Carr's original definition includes data and information. He argues that "it's hard to imagine a more perfect commodity than a byte of data—endlessly and perfectly reproducible at virtually no cost."

In fact, nothing in the universe is as diverse as a byte of data, which can carry information ranging from baby pictures to a digitally signed million-dollar bank transfer. It's like saying that Shakespeare's works are a commodity because he uses the alphabet just like everybody else. As many critics of Carr's view have pointed out, nothing is more scarce than the right information at the right time.

Now, having retreated from that view, he's redefined IT as "all the technology, both hardware and software, used to process and transport information in digital form...this does not encompass the information that flows through the technology."

This is astonishing. If you exclude "information" from "information technology," surely we can all agree that IT doesn't matter in competitive advantage or in anything else! It's all about the information.

Superior IT enables superior information—a resource that rivals superior talent in competitive differentiation. High-performing business models are also based on superior information.

Smart Hardware Cannot Be Commoditized

Carr further weakens his position by arguing that IT does not include the growing technology embedded in consumer products. In doing so, he conveniently eliminates one of the most important emerging waves of IT innovation and differentiation. The Internet is becoming the Hypernet—a term my colleagues and I use to describe truly ubiquitous broadband and services-based computing. The physical world is becoming smart and networked. The PC is being eclipsed by millions (and soon billions) of new information appliances. These include customized PDAs for warehouses, couriers, physicians or patients in drug field trials—either custom built or as generic appliances that can be integrated into a new system—many of which constitute scarce resources and are not easily replicable. More important, thousands of new product categories are emerging: digital televisions, automobiles, fire extinguishers, assembly lines, doors, clothing and coffee cups. All are becoming IT appliances. Every company has a historic opportunity to integrate IT-enabled services into its products. These devices are part of the future IT hardware, differentiating otherwise commodity products to lock out competitors.

DoCoMo I-mode went from zero to 30 million customers in just two years. In this case, a phone company understood that it could enrich its product—a simple wireless telephone—with IT services such as interactive games, shopping and other entertainment services. The result is a profitable juggernaut that is even now taking transaction revenue from banks. The Hypernet changes our concept of hardware. Of course, PCs, servers and storage technologies have become commoditized. But it is false to say that all hardware has become commoditized.

Carr is right to suggest that software has shifted considerably from being a proprietary resource to a purchased good that leveled the playing field. But he underestimates the customization required and the ensuing opportunities for distinguishing a company. Many companies today are implementing massive software projects that are hard to reproduce, using packaged software from companies like Oracle, PeopleSoft and Siebel. SAP, for example, has more than 2,000 customers. But Ed Tobin, the CIO of Colgate-Palmolive, says that "not one of them is using it the same way. It's all about how you embed a package in the business."

And what about Web services—which Carr says will further commodify software? Evidence to date suggests the opposite. This revolution in software is changing the Web from a medium for presentation of information (that's what HTML was about) to a computational platform. Yes, the Net is becoming an infrastructure—but a programmable one! This will create infinite opportunities for custom software development, new business design and competitive differentiation. Software companies in the future will build components—enabling their customers to deploy custom functionality.

True, Web services may enable competitors to more easily reproduce technology innovations. But it also enables companies to create software faster. Carr looks at only one side of a double-edged sword—the dark side. But the new technology lets companies get to market faster with business innovations. Yes, the speed of the competition is accelerating and competitors are trying to catch up. This is the new normal. Companies need to be more agile. Get used to it!

Similarly, ubiquity is also a double-edged sword. Of course technology is more pervasive now than in the past. But this creates new opportunities as systems and new business

models can scale instantly. Whereas in the past, American Hospital Supply had to purchase and roll out terminals and build complex, risky networks, today companies like eBay or Tesco can reach millions of customers instantly. It took Amazon.com only three years to build one of the most successful retail companies in the world. And its customers paid for the "terminals" and the "network."

Amazon.com and eBay don't have proprietary terminals in our homes or offices. So if competitors can easily replicate this technology, why haven't they succeeded? Basically, we're all locked in by the power of their software applications and business models. It seems the cost for us to switch to another competitor is prohibitive. And no competitor can touch these companies, because of their installed base. They have each created a new "proprietary" resource—the resilient power of IT-enabled relationships.

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At the cusp of each wave of tech innovation, market leaders seize advantage, whether as early adopters or fast followers. They grab positional advantage through a combination of IT and business design, and then others have no choice but to follow in their wake. This happens anytime there are new waves of tech innovation.

How IT Drives Business Model Transformation

The heart of Carr's problem is his inability to grasp the role of IT in the new business designs that enable competitive advantage.

In a classic case of one step forward, two steps back, Carr's book now accepts the notion that an effective business model can be the basis of competitiveness. This is progress. But he stubbornly denies the role IT plays in creating these new models. He suggests that investments in technology by industry leaders like Dell, JetBlue and Wal-Mart are marginal to their success. For example, in the case of JetBlue, he writes, "the source of that advantage lies not in the technology but in the business model."

But IT and business models are not discrete factors in strategy; increasingly, they are inseparable. IT is leading to profound changes in business design—not just to new business processes but to the deep structures of the corporation. Because IT and networks radically reduce internal transaction costs, companies can conduct business in real-time. My research shows that smart companies can speed up their metabolism and build high performance into their business designs.

Most important, IT is slashing transaction and interaction costs between companies. The upshot is that partnering is becoming more cost-effective than performing many business functions internally. The vertically integrated corporation is unbundling, and companies can now focus on what they do best and partner to do the rest in what I've called "business webs." Leading companies grow by focusing on their core—that cluster of activities where they have unique capabilities and where they create true barriers to replication. The evidence is clear: Companies that forge high-performance business webs tend to have better products, lower cost structures and better profitability than their vertically integrated counterparts.

But Carr specifically attacks the business web in a lengthy section of the book titled "In Praise of Walls." In a thinly veiled defense of vertical integration, he creates a classic straw man and labels myself and others as the "post-company school." Apparently, we believe that the corporation is no longer the "fundamental unit of commerce" and that it is being replaced by "amorphous, loose groupings of companies." Allegedly, we "jump to the

conclusion that companies will naturally get smaller." In supporting "the death of the company," we suggest that managers should not "keep their own company's interests foremost."

A quick reading of my work would expose this interpretation as a fanciful distortion. Of course the corporation remains the basic unit of commerce; it's the vertically integrated corporation that is failing. Some of the hundreds of business webs we studied are loose couplings, but most are not, having very tight integration of their business processes. Focused companies that orchestrate business webs are not smaller; they tend to have faster revenue growth and better prospects.

Take the furniture industry as an example. Herman Miller has orchestrated a high-performance business web. The best design talent—industrial designers who no furniture company could hire—are brought into the company's business web to ensure innovative designs. Herman Miller's distribution channel is an IT-based network of partners who customize furniture for consumers. And the company increasingly outsources manufacturing to companies that can do a better, cheaper job—again exploiting the power of the Net. The tonic of the marketplace is brought to bear on many business functions that traditionally have been shielded from the market by corporate walls. In Herman Miller's case, the results are clear—dramatically better products, revenue growth, net profit margin, ROI, revenue per employee and inventory turns compared to key competitors. (And they also have better IT.)

Companies can also achieve advantage through IT-enabled relationships in which customers are brought into the business web. Tesco is a food retailer in the United Kingdom that has created an online grocery shopping experience that exploits the effectiveness of its supply chain systems. Customers love it, and the business is profitable and growing.

It is true that as the Net becomes a powerful infrastructure, and as new standards enable rapid deployment of applications, some technology innovations can be brought to market and replicated faster. However, it's not so easy to do all the really hard work that makes a system advantageous to a company such as changing business processes, organizational structures, culture and human behavior. The corporate graveyard is strewn with the bodies of those who naively thought it was easy to change a culture. Launch a business innovation or new business design based on IT, and the biggest challenge for your competitors to replicate will be the changes you made to your business, not the technology that inspired them. Companies that successfully alter their business around IT can achieve a significant window of competitive advantage.

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Carr's Blueprint for Failure

This is not just an academic debate. The post-dotcom world, a tough economy, and considerable C-level cynicism about IT and innovation in general provide fertile ground for Carr's perspective. The trouble is, some companies might actually implement his recommendations—spend less; follow, don't lead; focus on vulnerabilities, not opportunities. Taken together, this is a blueprint for failure.

In some situations, it may make sense to be a follower to keep up and achieve competitive parity. But in others you should try to be a leader—not necessarily a big spender, but a leader where it counts. Many followers have tried hard to displace the competitive leaders I have discussed above. Most have failed.

As for spending less, evidence is strong is that services-oriented architectures, intelligent information networks, adherence to standards, autonomic systems, virtualization and database consolidation (to name a few) provide a basis for IT cost reduction. But do this as part of a strategy for more effective IT. Cut fat, not your company's nervous system.

Finally, manage your vulnerabilities, but focus on opportunities—not just for IT but for innovative business models enabled by IT. Think like Maple Leaf Foods, a company investing in a system that will provide supermarkets and consumers with detailed information about the history of a piece of meat, ensuring safety and quality. The program is based on new technologies including tools for DNA tracking. Transparency and accountability throughout their business web from farm gate to plate will help the company differentiate its products.

Ultimately companies face a choice. They can innovate in IT—a resource still in its infancy—to enable new business designs that help them differentiate in the market. Or they can yield to the pressures and cynicism of a difficult business environment. Punishment is already proving swift for those who make the wrong choice.

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